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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/050,118	01/18/2002	Tomoyuki Maeda	218347US0SRD	6917

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ALEXANDRIA, VA 22314

EXAMINER

BERNATZ, KEVIN M

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 10/31/2003

11KB

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/050,118	<b>Applicant(s)</b> MAEDA ET AL.	
	<b>Examiner</b> Kevin M Bernatz	<b>Art Unit</b> 1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 8/11/03
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-7,10-12,15 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 3,4,8,9,13,14,16 and 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \*   c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. Amendments to claims 16 - 20, filed on August 11, 2003, have been entered in the above-identified application.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Examiner's Comments***

3. The Examiner acknowledges receipt of the declaration of Mr. Kikitsu. The declaration has been carefully considered and, in so far as it applies to the rejections of record, will be addressed in the Response to Arguments section below.

### ***Specification***

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "Magnetic Recording Medium With L10 Crystal Grains Including Three or More Elements".

***Claim Objections***

5. Claims 3, 4, 8, 9, 13, 14, 16 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Claim Rejections - 35 USC § 102***

6. Claims 1, 2, 5 – 7, 10 – 12 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Coffey et al. ('728) for the reasons of record as set forth in Paragraph No. 3 of the Office Action mailed on April 9, 2003 (Paper No. 7).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 18 – 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coffey et al. as applied above, and further in view of Lambeth et al. (U.S. Patent No. 5,993,956) in view of Thiele et al. (U.S. Patent No. 6,086,974).

Coffey et al. is relied upon as described above.

Coffey et al. fail to disclose an underlayer comprising MgO, though Coffey et al. does teach longitudinal magnetic layers wherein "oxides materials such as ReO and ZrO<sub>2</sub>" can be used as underlayer materials (*col. 4, lines 33 – 41*).

However, Thiele et al. teach that multilayered seed/underlayer structures can be used under  $L1_0$  longitudinal magnetic layers such as FePtX or CoPtX, including CrMn (*col. 3, lines 47 – 67 and col. 4, lines 38 – 47*). Lambeth et al. teach that a combined underlayer structure of MgO under a CrMn underlayer for longitudinal recording results in improved coercivity without substantially effecting the crystal structure of the magnetic layer (*col. 4, lines 24 – 25 and col. 11, lines 23 – 46*).

It would therefore have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the device of Coffey et al. to include a MgO underlayer as taught by Thiele et al. and Lambeth et al., since the use of a MgO underlayer results in a longitudinal recording medium possessing improved coercivity without substantially effected the crystal structure of the magnetic layer.

#### ***Allowable Subject Matter***

9. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to teach or render obvious a Pt or Pd concentration meeting applicants' claimed atomic percent limitation. While the prior art recognizes controlling the overall composition of Pt or Pd to within 40-60% in the XPt alloys, the prior art of record fails to teach or render obvious controlling the Pt or Pd content *within* the grains to applicants' claimed range.

***Response to Arguments***

**10. The rejection of claims 1 - 15 under 35 U.S.C § 102(b) – Coffey et al.**

Applicant(s) argue(s) that the declaration of Mr. Kikitsu demonstrates that the invention of Coffey et al. fails to meet the claimed crystal *grain* compositions. The examiner respectfully disagrees.

The declaration of Mr. Kikitsu has been carefully considered and the Examiner notes that samples A and B are reported to possess crystal grains comprising L1<sub>0</sub> material and Au in an amount reading on claims 1, 6 and 11. However, the Examiner acknowledges that the disclosed crystal grains do not possess a Pt concentration meeting the claimed range in claims 3, 4, 8, 9, 13, 14, 16 and 17.

***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fullerton et al. (U.S. Patent App. No. 2003/0108721 A1) teach L1<sub>0</sub> FePt-X and CoPt-X alloys wherein X can be Ni, Au, Cu, Pd or Ag (*Paragraph 0024*).

**12. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M Bernatz whose telephone number is (703) 308-1737. The examiner can normally be reached on M-F, 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (703) 308-2367. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



KMB  
October 24, 2003



Paul Thibodeau  
Supervisory Patent Examiner  
Technology Center 1700